



**WORK PLAN FOR CONSTRUCTION AND OPERATION OF A
TEST GROWING AREA,
AT THE FORMER W.R. GRACE & CO. MINE,
LIBBY, MONTANA**

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INTRODUCTION

This Work Plan (WP) was prepared for W.R. Grace & Co. (Grace) to present the proposed approach to constructing and planting a test growing area within the former Grace mine site near Libby, Montana. This WP presents the proposed approach and rationale for the project, equipment and installation procedures, data collection information, an approach to health and safety, a summary of costs, and a proposed schedule.

PROPOSED APPROACH AND RATIONALE

Proposed Approach

The current mine site encompasses approximately 1,100 acres of 3,600 total acres of land within the property boundary. The mine is no longer active, but access to the upper portions of the mine site remains open. Areas of the mine and off-mine property associated with historical mine operations have been remediated in the past and the remediation soil and debris have been landfilled within the former mine area. Ongoing off-site remediation projects in the town of Libby are producing excavated soil containing trace amounts of vermiculite and asbestos that is being trucked to the mine area for safe disposal. Soils from off-site projects are being transported by truck to a transfer area known as the "amphitheatre" approximately two miles up the Rainy Creek approach road to the mine. Soils placed in this area are then transferred by truck to the final disposal landfill area (Area 19). Currently, the final disposal area is in the upper north central section of the mine site.

Remedium Group, Inc. (Remedium) proposes having truckloads of soil from the off-site remediation project placed in a cleared area within the mine site for use as planting media in a test growing area. The test area would be planted with native grasses and trees.

Rationale for Test Growing Area

The mine site has several areas that have been re contoured and graded in recent years to produce naturally draining slopes and drainage collection areas. Some of these areas have been revegetated and are now supporting trees and grass that cover the surface to prevent erosion and, ultimately, exposure of the tailings to the environment. Some replanted areas are doing well, with grasses and trees taking root and thriving. Other areas of the mine still need to be replanted. Growth of grasses and trees on the exposed areas of the mine will reduce and eventually stop windblown migration of soil and mine tailings, and reduce erosion transportation of soils and tailings during rain and runoff events.

Remedium is proposing to create a test growing area that can be used to observe the viability and effectiveness of selected species of trees and grasses as stabilizing vegetation. Remedium proposes to level and prepare a specific area within the upper mine site, plant trees and grasses and observe progress of the planted area as a test vegetation plot for establishing similar vegetation in other areas of the mine.

INSTALLATION

Proposed Test Plot Growing Area

Remedium proposes to install the test plot area adjacent to the main haul road that goes to the upper mine area. The test plot would be approximately 1 1/3 acres in size and would be located in a level area at an elevation of approximately 3670 ft. Figure 1 shows the proposed location of the test plot on an aerial photograph of the mine, looking south. The figure also shows the location of the existing landfill site, which is less than 1/3 of a mile from the proposed test plot area. The test plot is an irregular area approximately 200 feet wide from east to west , and 300 feet long from north to south. The plot is bounded by steep slopes on the north and west sides, and by the haul road on the east side. Figure 2 shows a closer aerial view to help visually demonstrate where the site would be.

Installation Procedures

Preparation of the Site. The selected site will be prepared by dumping the loaded trucks at the upper part (southeast) of the test site and having a dozer push the soil across the area to a depth of approximately 4 inches. It is estimated that approximately 650 cubic yards of material will be needed to cover the site. The topsoil will be walked into place by the dozer and compacted to a depth of 2-3 inches. After grading, approximately 40 trees will be planted in the soil in a random pattern no closer than 10 feet from one another. The soil must be free of plastic, trash and debris larger than 6 inches in diameter.

Selected Plantings. The selected trees are a hybrid species of poplar, chosen for their fast growing properties and heartiness. The trees will be purchased from a Montana nursery as potted juvenile trees approximately 5 feet high with a trunk caliper of approximately ½ inch.. Each tree will be planted by hand excavating a hole with a shovel. The hole will be large enough to hold the root ball of the tree and soil will be backfilled around the tree in such a manner as to create a small circular dike to retain water around the roots. After planting the trees, the rest of the site will be seeded using a mechanical seed spreader. The grass seed will be a mixture recommended by the State of Montana.

Maintenance. After planting, the trees and the grass may require regular watering to survive the hot dry summer weather typical for the area. Depending on what time of year the test area is planted, this may involve frequent irrigation by hose and spray, or simply by precipitation. As needed, Remedium will arrange for watering the test plot.

OBSERVATION

Remedium will arrange to have regular visual inspections of the test plot to observe progress during the growing season. A journal will be kept recording the watering

interval and any measures taken to manage the test plot. This information will be helpful in determining an approach to planting in other areas of the mine.

HEALTH AND SAFETY

Remedium proposes to have a local contractor perform the preparation work at the test plot site. The local contractor will have 40-hour Hazwoper-trained personnel and have the necessary PPE to protect their employees while within mine property. Both the contractor and Remedium will follow proper safety protocols while working on or visiting the site. This will include but not be limited to wearing a full-face respirator, tyvek coveralls, hard hat, steel-toed shoes, gloves and eye protection. The contractor will be required to submit an operating procedure to Remedium that explains and details how they propose to manage PPE and work tasks on the site.

COSTS

The anticipated cost of the test growing area described above is based on estimates from a local contractor, estimating guides, and experience. Table 1 shows a summary of the estimated costs.

TABLE 1
Test Growing Area Costs

Item	Estimated Cost
Soil Trucking and dumping	N/A
Spreading topsoil	\$2,500
Trees	\$1,000
Grass seed and seeding	\$1,000
Watering and maintenance	\$7,000
Total	\$11,500

SCHEDULE

Work on the test area can begin immediately. Upon approval, Remedium will work with the local EPA personnel to have loads, now being deposited on Area 19, redirected to the test plot. This will work out to be a shorter haul for the EPA remediation contractor and will be a win-win situation for all parties. It is estimated that loads normally hauled to Area 19 in 1-2 weeks will be sufficient to cover the test plot. Remedium will secure the services of a local contractor and spread the soils in preparation for planting. The amount of time needed to prepare the area will depend on the availability of topsoil from the amphitheater. It is anticipated that the test area will be completely planted during the summer of 2007.